NETWORKWORLD

'World's largest' telecom deal turns out to be a dud

BY CAROLYN DUFFY MARSAN

ORIGINALLY BILLED as the world's largest telecommunications purchase, the U.S. government's Networx contract is turning out to be chump change for the five carriers involved in the deal. Halfway through its 10-year term, the contract has driven around $2 billion in revenue compared to projections as high as $34 billion for this stage of the program.

Networx is an umbrella program that allows federal agencies to buy voice, data and video services from five carriers: AT&T, Verizon, CenturyLink (formerly Qwest), Sprint and Level 3. Created by the General Services Administration (GSA), Networx has a 10-year ceiling of $68.2 billion in revenue. However, due to delayed purchasing by agency customers, Networx total revenue through September 2012 is at $2.18 billion, GSA concedes. [See chart, page 16.]

"There's no question that Networx is not living up to GSA's expectations," says Ray Bjorklund, vice president and chief knowledge officer with consultancy Deltek. "It's not configured in a flexible way. It's harder to accommodate new services and new ways of buying than it should be. And the transition to Networx is many years behind schedule and still isn't done."

CLEAR CHOICE TEST

MOBILE DEVICE MANAGEMENT

Top tools for BYOD management

MobiControl and Afaria lead the way in five-vendor test of MDM tools.

CLEAR CHOICE TEST
WINDOWS 8/WINDOWS SERVER 2012

Microsoft targets virtualization

Tight integration of desktop/ server OS with Hyper-V and Active Directory is key.

PAGE 12 ▶

Twice the virtualization.
Lower management costs.
None of the compromises.

You've been looking for IT solutions that meet the increasingly sophisticated demands on your infrastructure. IBM Flex System,™ featuring Intel® Xeon® processors, provides simplicity, flexibility and control in a system that doesn't require compromise.

It supports up to twice the number of virtual machines as the previous generation of blade servers.[1] And IBM Flex System Manager™ can help reduce management costs by providing visibility and control of all physical and virtual assets from a single vantage point.[2]

You can select individual elements and integrate them yourself or with the support of an IBM Business Partner. Or you can choose an IBM PureFlex™ System and leverage IBM's expert integration for an even simpler experience. Learn more at ibm.com/systems/no_compromise

Learn why Clabby Analytics says IBM Flex System is the best blade offering in the market. Download the paper at ibm.com/systems/no_compromise

FROM THE EDITOR | JOHN DIX

The new Microsoft

Microsoft seems to have gotten its grove back, putting forward a hip, Apple-esque branding effort for the Windows 8 products that reflects new energy in Redmond.

Yes the company has antagonized hardware partners by coming out with its own tablets. Yes the new Windows UI will take some getting used to. Yes Windows Phone 8 is a long shot. But under the covers there are lots of new goodies for IT and, failing these steps forward, Microsoft risked a long, slow decline.

CEO Steve Ballmer at the Build 2012 developers conference last week said the introduction of Windows 8 is right up there with the two other biggest events in his tenure at the company: the launch of the IBM PC and the introduction of Windows 95, the first version with an integrated Web browser.

The early responses are probably better than the company could have hoped for — preorders of the Surface tablet outstripping supplies, 4 million copies of Windows 8 sold in the first three days, and a flood of reviews, most of them positive, including our own:

"Much of the attention being paid to this week's Windows 8 launch focuses on the new Metro-style interface and the fact that Microsoft is extending its desktop OS to tablets and smartphones. But for enterprises, the real story is the way Microsoft has integrated Windows 8, Windows Server 2012 and the Hyper-V hypervisor to create an unmatched system for running virtualized environments" (see "Microsoft targets virtualization," page 12).
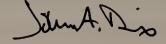
In fact, at Build Ballmer said Microsoft has already sold "tens of millions" of corporate licenses for Windows 8. Of course that is a drop in the bucket compared to the billion-plus installed base of Windows PCs out there, but it is a healthy start.

What of those observers who say the Windows franchise is threatened by an increasingly mobile workforce relying on tablets and smartphones from other suppliers? There is no denying the influx of these devices, but anecdotal evidence suggests they are adjuncts to instead of replacements for desktops/laptops, so let's not write off Windows so fast.

Change comes slow, after all. Windows 7 just surpassed the XP installed base this past summer. And four big shops we checked in with say Windows is just as important to them today as it has always been.

These companies — an $8 billion energy company, a $2.5 billion consumer electronics firm, a $5.5 billion consumer products company and a national laboratory — use Windows for 80% to 100% of their desktops/laptops today and three of the four say they will migrate to Windows 8 beginning in the next six to 12 months. While one says it may upgrade to Windows 7 first.

With the new virtualization and management tools baked in, Windows 8 looks like a winner, regardless of how the Windows tablets and phones sell.

John A. Dix

THE DATA CENTER IS HERE

At Brocade, we offer unmatched expertise in delivering Ethernet fabrics that support today's highly demanding cloud and virtualized environments. We were first to market with a fabric solution, and we're the world leader in fabric technology for storage area networks.

The solution for automated scalability.

Brocade® VCS® Fabric technology delivers proven and resilient Ethernet fabric-based architectures that can automatically scale to meet your company's needs. If it's a question of seamless scalability, the answer is Brocade.

Find an easier way to manage your virtual infrastructure. Visit brocade.com/everywhere

BROCADE

bits

Microsoft sells 4 million copies of Windows 8

Microsoft reports to have sold 4 million Windows 8 upgrades in the first three days that the new OS was available.
tinyurl.com/clk5ye4

Pentagon opens door to iPhones, Android devices

IN ANOTHER BLOW to RIM's fortunes, the U.S. Department of Defense will consider smartphones other than BlackBerries if they can meet the government's tough security rules. The DOD is inviting vendors to bid on software to secure non-RIM smartphones and tablets, according to published reports. The DOD is not scrapping its BlackBerries, but expanding the range of supported devices. One of the companies bidding on the management software contract will be RIM itself, offering its BlackBerry Mobile Fusion application for managing Android and iOS devices. *tinyurl.com/bsjkvam*

Big Switch lands big funding

OPENFLOW CONTROLLER start-up Big Switch Networks closed a $25 million Series B funding round, bringing the total raised by the company (founded in early 2010) to $39 million. The round was led by Redpoint Ventures and joined by Goldman Sachs, along with existing investors Index Ventures and Khosla Ventures. Big Switch has demonstrated interoperability with Arista, Brocade, Dell, Extreme, HP, IBM, Juniper Networks and Citrix, Red Hat, Microsoft, and VMware. Its OpenFlow/SDN controllers are designed to enable network virtualization and private cloud buildouts that extend beyond the limit of virtual LANs and facilitate applications such as data center interconnects and disaster recovery. *tinyurl.com/aa6q44h*

'Zombie browsers' multiplying

SOME WEB browsers can be tricked into using malicious extensions that can give hackers the ability to hijack the user's session, spy on webcams, upload and download files, and in the newer mobile-device area, hack into Google Android phones. Zoltan Balazs, IT security consultant at Deloitte Hungary, spoke about the topic he calls "zombie browsers" during last week's Hacker Halted Conference in Miami. He said up until a year ago, only 10 of these malicious browser extensions were known to exist, but this year has seen 49 new ones. "It's skyrocketing," Balazs noted, and he faulted the antivirus vendors for not addressing the issue. "Even after two years, none of the anti-virus vendors detect these," he said. *tinyurl.com/a7z82t3*

Cisco simplifies server control

CISCO LAST week introduced UCS Central, a management tool designed to simplify control of thousands of servers spread across data centers, letting IT configure service profiles, ID pools, policies and firmware across multiple domains. The existing UCS Manager can only govern a single domain. UCS Central requires UCS Manager for local domain management while UCS Central provides tiered management for the global infrastructure. UCS Central also has an XML API for integration with third-party systems management and cloud orchestration tools, including Compuware, for control of application performance across data centers, private, public and hybrid clouds; Cloupia for the ability to replicate between multiple sites for disaster recovery; Zenoss for discovery, monitoring and managing UCS performance and capacity utilization; ScienceLogic for surveillance of multi-tenant data centers; and Splunk for gleaning operational intelligence from big data generated by thousands of UCS servers. tinyurl.com/*aal2hls*

Microsoft's ALM service free for five users

AFTER A year in beta, Microsoft launched Team Foundation Service, a hosted version of its application lifecycle management (ALM) software. There's no cost for five or fewer users and an unlimited number of projects. "ALM has traditionally been known to be very enterprise heavy, but [this service] could be utilized by people who may not need enterprise scale but could still benefit from tools and services to manage their projects," said Karthik Ravindran, senior director of ALM marketing and management. Microsoft did not say when TFS would be commercially available for more than five users, nor how much it would cost. *tinyurl.com/bd2nn23*

Firefox: Botched browser ballot cost us 9M downloads

MICROSOFT'S BROWSER ballot screw-up in the European Union cost Mozilla an estimated 8.8 million downloads of its Firefox browser, the open-source vendor estimates. Microsoft faces fines that could reach into the billions of dollars for omitting a browser choice screen it was supposed to show European users of Windows 7. According to Harvey Anderson, Mozilla's general counsel, Firefox's daily download average fell 63% from approximately 54,000 to a low of 20,000 before Microsoft rolled out a fix for the snafu last summer. After Microsoft updated EU users' Windows 7 PCs with a patch to restore the ballot screen, Firefox downloads increased 150% to an average of approximately 50,000, Anderson claimed. Other factors beside the missing ballot, however, clearly played a role in Firefox's decline, including the concurrent rise in Google's Chrome. *tinyurl. com/as5dq8j*

Amazon drops cloud prices, again

AMAZON WEB Services, fresh off an outage that brought down big-name sites such as Reddit and Imgur, announced an 18% price reduction for its virtual machines. It's the 21st time the leading Infrastructure-as-a-Service vendor has dropped prices since launching its cloud in 2006. In addition to the price drop, AWS released a new series of Elastic Cloud Compute instances with high input/output qualities. They're optimized, AWS says, for media encoding, batch processing, caching and Web serving. *tinyurl.com/azdblaq*

RedPrairie to buy JDA Software for $1.9 billion

REDPRAIRIE IS merging with fellow supply-chain software vendor JDA in a deal worth roughly $1.9 billion, the companies announced last week, just days after reports surfaced that JDA had put itself up for sale. Analysts had speculated about a number of potential suitors for JDA, including IBM and Oracle, before RedPrairie — which is owned by private equity fund New Mountain Capital — emerged as the buyer. The pending merger is "going to up the stakes for the rest of the [supply-chain] players, especially the smaller ones that remain," said analyst Bob Ferrari of the Ferrari Consulting and Research Group. "Putting these two companies together is not going to be an easy feat," he added. *tinyurl. com/bjoefm4*
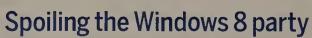
Safeguarding your cellphone

good

U.S. CELLPHONE carriers took a major step last week toward curbing the rising number of smartphone thefts with the introduction of databases that will block stolen phones from being used on domestic networks. The initiative got its start earlier this year when the FCC and police chiefs from major cities asked the cellular carriers for assistance in battling the surging number of smartphone thefts. In New York, more than 40% of all robberies involve cellphones and in Washington, D.C., cellphone thefts accounted for 38% of all robberies in 2011.

iPhone foils burglar

A THIEF accidentally filmed himself with his own iPhone while robbing a house with a gang in West Yorkshire, England, delivering authorities evidence to help put him behind bars for 44 weeks. The *Daily Mail* reported that the 23-year-old crook meant to use the iPhone as a flashlight, but instead hit the video record button.

bad

Spoiling the Windows 8 party

ugly

MICROSOFT HAS been slapped with a patent infringement lawsuit over its use of dynamic "live" tile icons in Windows, including in the newly launched Windows 8 OS for PCs and tablets and in the Windows Phone 8 OS for smartphones. SurfCast, based in Portland, Maine, filed its lawsuit in the U.S. District Court for the District of Maine, and is asking for Microsoft to pay unspecified damages and attorneys' fees. At issue is U.S. Patent 6,724,403, titled "System and Method for Simultaneous Display of Multiple Information Sources," which SurfCast was awarded in 2004. In a statement, Microsoft said it was "confident" it would prove in court that SurfCast's claims are without merit and that Microsoft has created a "unique user experience."

PARITY BITS

200 MILLION

The number of times iOS 6 was downloaded in the first month of its release.
SOURCE: APPLE

peersay

Is Microsoft a threat to VMware?

➔ **I'VE USED BOTH** hypervisors extensively in the real world. What I see across all markets is that VMware has a battle-hardened and tested solution set "from soup to nuts." Microsoft is playing catch-up, and a managed Hyper-V environment is not free (Re: "VMware, the bell tolls for thee, and Microsoft is ringing it"; tinyurl.com/9r276rv).

If I am a CIO I want to know my hypervisors aren't going to come down with the latest MS kernel viral plague. That thought alone would keep me on VMware.
Ivan

➔ **THIS ARTICLE BROUGHT** to you by Microsoft, the next software giant getting ready for the Long Fall. Microsoft hasn't done anything truly innovative or new since it came out with Active Directory. It's made its living by leveraging its monopoly position and just can't stand it when another company succeeds through innovation.

From the company that brought you Vista and, now, Windows 8.
russbutton

California State expels Cisco

➔ **I'VE NEVER SEEN** this kind of price disparity. My last bake-off was between Cisco and Brocade, and their two solutions were within 5% of one another after discount (Re: "Cisco network really was $100 million more"; see page 10).

The only way this deal could possibly be that far off is if it were written with specific-enough details that Cisco had to jump several steps through the product line to meet the requirements. Or, if the requirement was that all possible licensing was included.
jla3742

➔ **TWO YEARS AGO** I had the same experience. We refreshed our network switches and telecommunications system. Alcatel-Lucent won the bid by a significant margin over Cisco. After doing much research and verifying the bid met all of the required specifications, the bid was awarded to ALU and it

has been one of the best decisions in my 25-year career as an IT director. Not only is the hardware one-fifth of the cost, the support is also. The system has performed beyond our expectations.
Larry

➔ **I FIND IT** bemusing how many commenters appear to be overlooking the fact that there were five bidders and not just two (Re: "Ciscogate"; tinyurl.com/cgceeho).

So whilst accepting the future viability of ALU is questionable, the real question here is how Cisco justified being $82 million more expensive than HP, $91.4 million more expensive than Juniper and $91 million more expensive than Brocade.

The only conclusions I can think of are Cisco didn't actually want the business, it was trying to fleece CSU, or it's been so busy writing RFPs that it's forgotten how to interpret them.
returnofthemus

> The only conclusions I can think of are Cisco didn't actually want the business, it was **trying to fleece CSU.**

Linus, Linux are incomparable

➔ **ONE CANNOT COMPARE** OpenStack to Linux. Also, it is through Linus' vision, development and proper use of the GPL, combined with the dominance of Microsoft, that created a perfect storm and allowed Linux to grow and prosper. Would Linus have taken advice from his enemies? Has he ever backed down from anything or failed to offer a real opinion (Re: "Does OpenStack need a Linus Torvalds?" tinyurl.com/cvwl6gn)?

Let's not confuse a 2-year-old project with the promise of changing the world from a visionary who did change the world.
fstrimling

➔ **GREAT ARTICLE, BUT** it disregards that Linus is a technical leader and a visionary. Many of the folks you mentioned are not technical and many don't have much experience building real IaaS clouds.

A Linus for OpenStack will be: a) a leader and decision-maker; b) technical; c) experienced with IaaS. Assuming that one emerges, that is.
randybias

Microsoft doubles down on Windows 8 developers

BY TIM GREENE

REDMOND, Wash. — Microsoft is all-in on the biggest gamble in its history.

That was the message to developers at Build 2012, the conference at the corporate campus last week where executives outlined what the company has done to make writing new Windows applications faster and simpler.

They also demonstrated new features developers can bring to apps they write for Windows 8, Windows Phone 8 and for Microsoft's cloud service, Azure, all in the hopes of sparking inspiration that will result in applications business customers will want badly enough to buy into Windows.

The stakes are high. Microsoft has launched the new Windows 8 operating system designed heavily around touchscreens but also supporting mouse and keyboard. To complicate matters there are two versions, Windows 8 and Windows RT, only one of which — Windows 8 — supports traditional Windows applications. Windows RT supports only new touch-centric apps Microsoft calls Windows Store apps.

Toss in that Windows Phone 8 has just launched as well, sharing the same look and basic navigational scheme as Windows 8 and RT. The hope is that customers will want their phone, PC and tablet to have the same look and feel, share applications and share data across all devices, aided by Microsoft's cloud storage service known as SkyDrive.

That's a lot for a customer to take in, and Microsoft is counting on developers to show by example how this can all work through the applications they write.

Meanwhile the clock is ticking, says Charles Golvin, an analyst with Forrester Research. Microsoft has about two years to reach all its goals, otherwise it will miss the chance to dominate Apple and Google in mobile devices, he says.

An essential element is applications — table stakes apps, existing apps that perform better on Windows, and ground-breaking apps that are only available on and supportable by Windows, Golvin says.

With this backdrop, Microsoft's CEO Steve Ballmer and his top executives delivered a slew of tools, perks and promises to energize the apps writers. Some highlights:

- A software developers kit for Windows Phone 8.
- Launch of a Windows Azure Store where developers can hawk applications to augment Azure cloud services.

Microsoft CEO Steve Ballmer revealed a flurry of products last week at Build 2012, all surrounding the release of Windows 8. See our test on page 12.

- Closer integration between Windows operating systems and Azure to make it easier to write apps that rely on an Azure back end.
- Team Foundation Service, an Azure-based software development tracker.

To sweeten the pot, Ballmer gave attendees a free Surface tablet/laptop, 100GB of free cloud storage via SkyDrive, a free Nokia Lumia 920 Windows 8 phone and a discounted developers registration to the Windows store.

Ballmer asked that attendees go out and create lots of apps for the Microsoft environment, promising that Microsoft would follow through with advertising that should boost the market for those apps.

In response to a massive Microsoft effort, apps available in its Windows Store have grown from about 1,000 two months ago to more than 10,000 today, according to the website winupdate.com. More than 85% of the apps are free, the site says.

Whatever success Microsoft has with consumers, it has a more difficult time with businesses, Golvin says. "What we've seen in our data, the enthusiasm for adopting Windows 8 especially in the enterprise is much, much lower than it was for Windows 7," he says.

That doesn't mean enterprises aren't keeping an eye on what Microsoft is up to, judging from attendees at Build 2012.

Preston Doster, a consultant with Slalom Consulting, attended seeking more detail on how the pieces of the Microsoft puzzle fit together. Clients say that they're interested in the possibility of slates that can join enterprise domains for work purposes, Doster says, something iPads cannot do. That potentially gives businesses more control over Windows 8 devices, he says.

With the ability to insert entire blocks of code from other sources into new Windows Store applications, it should be possible to readily convert existing line-of-business applications written in .Net, enabling transition from Web apps to desktops. That means quicker adoption of touchscreen devices into businesses, he says.

He says some clients are already porting some applications to Windows 8 as a proof of concept, but haven't committed to using them in production.

Ken Sutcliffe, a developer for Cancer Care Ontario, already uses Windows Phone applications to help in the treatment of cancer patients.

Brock Dodgson, the development manager for the agency, says he is looking for what new technology could augment the existing application. For example, near field communication supported by Windows Phone 8 could be used to share drug information sheets between clinicians and patients. "I'm trying to see where it might fit in," Dodgson says.

He says his organization might write a prototype Windows 8 version of a head and neck radiology application already written for the iPad. That might be more attractive to hospital IT staffers because it would rely on a Windows back end that they are familiar with and rely on already, Dodgson says. ■

Cisco network really was $100 million more

California State explains RFP that produced wide delta in Cisco, Alcatel-Lucent bids

BY JIM DUFFY

CAL STATE confirmed the wide pricing discrepancy for a 23-campus network overhaul awarded to Alcatel-Lucent last week for $22 million. Alcatel-Lucent was selected over Cisco and three others by offering the low bid for the project, which was $100 million less than Cisco's.

CSU allowed *Network World* to review spreadsheets calculating the eight-year total cost of ownership of each of the five bidders for the project. (Cisco declined to comment for this story.)

The price discrepancy between Cisco and Alcatel-Lucent sparked a flurry of skepticism in comments on the Network World site that the bids did not represent a fair, apples-to-apples comparison. When asked if the number of network elements Cisco proposed drastically outnumbered those of the other bidders, Michel Davidoff, director of cyberinfrastructure at CSU, replied "Absolutely not."

"Everybody had to comply with this spreadsheet," he says. "Every campus had two border routers, two cores, and two server farm switches. All the vendors had to propose exactly the same solution" based on the average number of servers deployed at each CSU campus. "All of this is based on exactly the same data to all of the vendors. It's exactly the same formula for all of the vendors."

Alcatel-Lucent won the project with a bid of $22 million. Cisco was the high bidder with a cost just less than $123 million. Not only was Cisco's bid more than five-and-a-half times that of Alcatel-Lucent's, it was three times that of the next highest bidder: HP, at $41 million.

Juniper came in at $31.6 million, and Brocade offered $24 million. All of the prices included discounts offered to CSU, and the price delta between Cisco and the other bidders actually widened after the discounts were applied, Davidoff says.

The costs were broken down into switches and routers for access, server farm, core and border routing requirements. They included port densities from eight to 480 ports of Gigabit Ethernet and 10G Ethernet, with copper and fiber connectors, Layer 2 and 3 feature sets, PoE and non-PoE.

Cisco pitched the Catalyst 3750-X for access, Nexus 7000 for server farms, Catalyst 6509 for the core and the ASR 1006 for border routing. Alcatel-Lucent proposed the OmniSwitch 6850 for access, and 9700 for server farms, core and border routing.

Cal State Fullerton is one of 23 networked CSU campuses, which went with the less-expensive Alcatel-Lucent gear.

Post-RFP, however, CSU decided to deploy the OmniSwitch 6450 and 6850 for access, 6850 and OmniSwitch 6900 for server farms, and 6900 for core and border routing — all of which lowered the cost of the project.

Total bid costs were the sum of Layer 2 hardware (and software), Layer 3 hardware (and software), Layer 2 maintenance, Layer 3 maintenance, training, and taxes and shipping. Cisco's cost in each respective category was $51 million; $18.7 million; $34.3 million; $10.6 million; $1 million; and $7 million.

Alcatel-Lucent's was $14.5 million; $2.5 million; $1.8 million; $798,000; $777,000; and $1.7 million.

San Jose twist

Alcatel-Lucent will be deployed at 22 of the 23 CSU campuses; San Jose State University is going its own route with a broader Cisco implementation costing $28 million over five years.

SJSU is replacing three legacy phone systems with a Cisco VoIP implementation supporting integrated voice/data and video. The university is also implementing WebEx conferencing in each classroom, Wi-Fi access across the campus, high-definition TelePresence conferencing in 51 "learning spaces," and a new switch/router infrastructure.

"Our view was not what hardware or software we were looking at; our view was a comprehensive solution with a strong emphasis on learning and the delivery of learning content and the students' success," says SJSU President Mohammad Qayoumi.

Cisco is SJSU's incumbent vendor, just as it is with the entire CSU system. Asked if SJSU put the project out for bid, Qayoumi says the university "looked at the industry at what was available. ... No other vendor could meet the needs. They may have better cost or performance but the more important element in a university is how all of these technologies connect together and work as an integrated solution."

SJSU worked with Cisco over a six- to nine-month period designing a system, Qayoumi says. He says he didn't know if SJSU took part in the RFP evaluation that culminated in Alcatel-Lucent winning the $22 million systemwide contract.
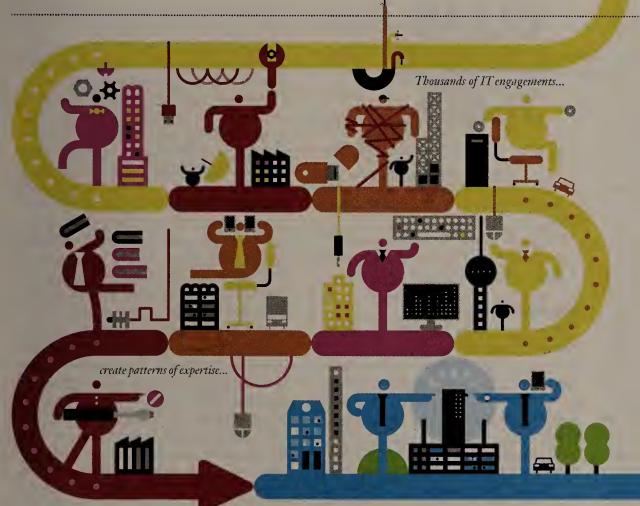
"I don't know, but I don't believe we participated in the CSU systemwide evaluation," he says. "I don't know what kind of committee system the chancellor's office had set up for evaluating Alcatel.

"If you look at the overall solution . . . you might make savings in one particular aspect, whether it's hardware, software or servers," he says. "But our view was, how does it really meet the needs of all of our students and the needs of our faculty and staff. That was the most critical element for us."

Davidoff declined to comment on SJSU's decision to go in another direction for its network infrastructure. The first year of the SJSU project will be funded by the sale of SJSU's Educational Broadband Service spectrum, and additional funds will come from the university's IT services office budget and other sources. ∎

FROM DEPLOYING IN MONTHS

Thousands of IT engagements...

create patterns of expertise...

which automate processes, speeding up deployments and simplifying management. So you're on to the next thing.

expert integrated systems can be up and running in as little as four hours.[2] And once deployed, these systems can automatically scale and adjust resources as the needs of the business change—a process that might otherwise take weeks—freeing IT people to focus on larger, more strategic goals.

"It's not going to be about tinkering...It's getting back that thirst to make something."

Andrew Smith
VP, McKesson IT

TO READY IN HOURS.

According to Forrester, the typical IT department spends at least 33% of a project's budget just specifying, designing and procuring IT components. And once procured, it can take up to three months of tweaking before those resources are ready to be used.[1]

With decades of experience and thousands of deployments in the same industries, on the same topics, even for the same tasks—why is it that organizations are forced to waste massive amounts of time and resources starting from scratch with every new project?

INTRODUCING
IBM PURESYSTEMS.
To address this problem, IBM set out to design a system that could benefit from previous experience—a system that could follow the patterns established by successful IT projects to make it simpler to deploy and manage new ones.

8min

An IBM PureApplication™ System cuts the deployment of OneTree Solutions' PriceLenz™ software from 3 weeks to 8 minutes.

With the launch of PureSystems,™ we are now delivering on that promise.

Using patterns established by IBM and leading software vendors, this new breed of

On a smarter planet, organizations will no longer address complex challenges with generic systems. Instead they can rely on integrated systems with the built-in expertise to help solve them. **ibm.com/simplify**

LET'S BUILD A
SMARTER PLANET.

IBM

Microsoft targets virtualization

Tight integration of desktop/server OS with Hyper-V and Active Directory is key

BY TOM HENDERSON

CLEAR CHOICE TEST

Much of the attention being paid to last week's Windows 8 launch focused on the new Metro-style interface and the fact that Microsoft is extending its desktop OS to tablets and smartphones. But for enterprises, the real story is the way Microsoft has integrated Windows 8, Windows Server 2012 and the Hyper-V hypervisor to create an unmatched system for running virtualized environments.

Both Windows 8 and Windows Server 2012 sport the new Metro-style GUI, but we found that it's not as radical a change as has been reported. Indeed the bemoaned missing Start button and menus already have a dozen replacements being offered freely (or almost freely). If you know about Windows 7 or Windows Server, the menu makeovers are rapidly obvious, we found.

Although we have some minor reservations about Windows Server, we found the Windows Server/Windows 8 Enterprise combination to be far ahead of its peers for large enterprise deployments and management. And that's not even counting the additional management functionality available from Microsoft System Center 2012.

Inside the Windows Server 2012 platform is a shift toward the kind of programmability first envisioned by Bill Gates when he declared that Windows would run on Basic as a programming environment. That was an allusion toward the Visual Basic scripting that became popularized in inter-application/platform custom coding efforts.

These efforts allowed organizations to integrate custom code with Microsoft Office apps, and Web development efforts then became centered around Microsoft Share-Point services. While these "departmental" and populist development efforts continue, Microsoft has now evolved its PowerShell "cmdlets" in a way that mimics scripting and inter-platform communications, but in vastly more powerful ways.

The goal is to give the Windows platform as much potential for programmability and customization as Linux distributions.

Windows 8 Enterprise

Prerelease criticisms have focused around a number of changes that appear to alter the character of Windows-as-we-know-it. We don't think so. Windows 8 has a new user interface, but the changes are no more radical than those we've seen from Apple, Canonical and others.

There are just three different versions of Windows 8 to choose from: Home, Professional and Enterprise, which is differentiated by its ability to be activated via Windows 2012 Key Management Services. Professional/Enterprise can be considered the analog to Windows 7 Ultimate; these replace up to nine different versions in Windows 7.

You get the Hyper-V hypervisor in Professional/Enterprise that's the same version shipped with Windows 2012 Server, replacing Windows 7 Virtual PC as a bare metal-type hypervisor.

Ostensibly, it's used to run a prior version that you upgraded from, like Windows XP, Vista or Windows 7. You can have your old apps in other ways, too. You can host Windows 8 instances as VMs on Windows 2012 Hyper-V, VMware or other hypervisors, too.

Microsoft's application virtualizer, App-V, has been upgraded and now has a physical-to-virtual feature, although we didn't test it. App-V Version 5 allows, like prior versions, a RemoteFX-based GUI connection to an application that's executing someplace else.

Microsoft Windows 8 wants to own the master boot record (MBR) on a system's hard drive, which some have objected to, but solutions that allow an alternate boot have already become available. The controversy regarding whether to prevent boot-sector virus vectors through the use of a UEFI secure boot (a BIOS replacement scheme) initially riled people who like to host concurrent operating system or disk partition instances. And we found that Windows 8, at installation, indeed grabs and will not eagerly let go the disk master boot, securing it and making it very difficult to place other operating systems on it.

Disk security methods already in place will be removed on installation, unless Windows 8 plainly refuses to use the disk because it can't partition it. We applaud Microsoft's attempts at boot security, and don't have the qualms that others find when a vendor tries to secure a system. The security trade-off, we feel, is worth it.

We ran into one case where a prerelease version of Windows 8 wouldn't install without removing older partitions, but all upgrades we tried from Windows 7 to Windows 8 worked flawlessly.

The Windows 2012 Key Management Service allows instances of W8E to be installed, grabbing an activation key when initially installed. This works with Windows 7, too. The operating system payloads can also be modified to deploy both Microsoft and third-party software for automated updates.

Windows 8 opens with the Windows 8 UI, which is also found on Windows Server 2012, Windows RT and Windows Mobile 7.5+. The UI isn't tough to maneuver at all, we found. A fast mouse-movement to the right of the main UI reveals options to change settings, and otherwise move around. Behavior of applications already installed shouldn't change. But there's a rub.

There are apps currently compatible with Windows 7, and those should run OK. Apps that use the new Windows 8 UI are called Windows 8 apps, and can be obtained (ostensibly) only from the Microsoft Store. The store is currently starting to fill, but by no means has the quantity found in Apple, Google or Amazon app stores. The regimen used to vet applications in the store is also still largely unknown.

Other items we tested include: the Windows 8 User State Migration Tool, which

NETRESULTS

Product	Windows 2012 Standard and Datacenter editions	Windows 8 Professional and Enterprise editions
Pricing	Starts at $595	Starts as upgrade at $39
Pros	Broad Hyper-V updates; easier deployment; PowerShell additions; somewhat cloud-able	Mostly Windows 7 underneath, so stable; easy to install
Cons	Either be Active Directory-compatible or face second-class citizenship; licensing can be expensive	New interface might flummox some end users

allows user settings to be migrated to a new machine; Windows To Go, which makes a bootable (think USB flash drive or other externally connected drive) instance, system hardware-permitting; and we played with making customizable Windows 8 P/E images for distribution purposes.

By combining these tools, coupled to server-based key management tools, deploying Windows has been made almost as simple as an online Linux distro.

On our Lenovo T520 tablets Windows 8 boots in 16 seconds to usability in a fresh installation, versus Windows 7 (with updates) at 27 seconds. We could detect no real disk speed changes, but the UI is fast and has a "snappy" feel when we changed screens, or popped back to the Windows 8 UI with the Windows key on the Lenovos.

Windows 8 isn't quite as radical as Windows Server 2012, but the unified UI strategy is a departure from UI and iterative functionality improvements. Windows 8 is more distributable, more easily secured and works hard to retain an enterprise presence. Old software works, new software installed without issue if it works with Windows 7. What's for sale here is cross-device unified behavior atop the gains made by Windows 7.

Windows Server 2012 (Standard and Datacenter)

Microsoft's plentiful work in 2012 was spent making Hyper-V more competitive with features of other virtual machine and cloud services vendors, but also in out-featuring its competition in management and enterprise-focused control-plane capabilities.

You don't have to deploy all of the options to get just traditional file-and-print, Active Directory controls and MS Exchange going — the most popular basic combination.

What Microsoft has added is the ability to get to those extra features rapidly and with rational procedures for civilians, or modifiable-then-deployable payloads for larger organizations that must distribute customized server payloads. And it's all 64-bit.

There are two forms of Windows Server 2012 — Standard and Datacenter; both can be optionally run over Hyper-V. Each Windows Standard/Server license covers just two physical processors, which we found comparatively limiting, although somewhat inline with hypervisor competitor VMware — where you'll pay for the hypervisor license and, in addition, the Windows license. Standard edition allows two VMs; licenses can be stacked up to eight VMs for two licenses on

the same server. Datacenter licenses are essentially unlimited, subject to the two physical processor rule. CAL (Client Access Licenses) are roughly the same as before, and remote access (VDI) sessions also require additional-cost licensing support in many cases.

We could also choose to install, in a GUI or GUI-less version, Server Core.

In the Server Core installation, the initial server payload can be preconfigured to wake up the first time and find resources as a package, or can be rapidly and subsequently built through the use of additional PowerShell commands. If you haven't preconfigured anything, you're dropped to a "cmd" box at the end of the Server Core installation, and will subsequently run administration and modification of that server from a different machine, or through the use of PowerShell cmdlets.

If the GUI-based installation is chosen, only a few selections need be made until the server initially comes alive. From there, a server installation dashboard provides choices of what to do to install additional features.

What we liked about the changes in the Dashboard approach was that it allowed us to make choices, and it would figure out the dependencies — other apps needed — then let us allow the server to reboot automatically.

The number of PowerShell cmdlets has increased dramatically in Windows Server 2012, and extend to managing Active Directory clients. What's lacking is a rudimentary filing or document control mechanism to store and identify PowerShell scripts in a way above implying the function of a script by its file name.

Using Windows Server 2012 in a virtualized environment also has improved. The changes in Microsoft's bare metal hypervisor, Hyper-V 3, now allows an onboard L2/L3 switch to be configured to manage traffic. The switch is programmable and can be enlightened to accommodate VM machine moves among

server hosts for host-resource matching.

The infrastructure support in Hyper-V is vastly larger in 2012 Server editions compared to 2008 R2.

In Windows Server 2012, Active Directory Rights Management Services (AD RMS) are linked to Active Directory Dynamic Access Control, which extends the covered storage "turf" to devices that can be controlled via Active Directory identity and access controls.

We set this up and copied numerous folders. If a device is AD-authenticated (Windows Vista+), we had protection afforded for the files. We needed to generate a client certificate, which, in turn, is used by the server to match identity, a process called DRMActivate.

Once installed, a match is made between the client and server portion when the certificates match (we also tried fudging a cert, but that didn't work) and we received file access as we'd prescribed, as the creator or administrator of the files and folders. AD RMS also controls policies for the Windows 8 AppLocker feature. Encryption comes with BitLocker, but can also be run with a USB containing the key.

Active Directory is a key hook that Microsoft has, and if your clients and servers can speak Active Directory, you're happy; otherwise you're still a second-class citizen.

What the Windows 2012 Server editions provide is a compelling reason to stick with Windows infrastructure, as many of the advances represent integration of management components that have no competitive parallels. Licensing costs are high, although we like the reduction from 17 versions of Windows Server 2008. Now there are four. Whew. ■

Henderson is principal researcher for ExtremeLabs, of Bloomington, Ind. He can be reached at kitchen-sink@ extremelabs

SCORECARD ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Product	Windows 2012 Server	Windows 8 Professional/ Enterprise
Installation/Integration (25%)	4.5	4.5
Features/Compatibility (25%)	4.25	4
Management/Administration (25%)	4.25	4
Security (25%)	4.5	4.5
Total	**4.38**	**4.25**

SCORING KEY

5: Exceptional
4: Very Good
3: Average
2: Below Average
1: Consistently Subpar

Gartner: 10 IT trends for the next five years

BY MICHAEL COONEY

ORLANDO — Trying to stay ahead of the curve when it comes to IT issues is not a job for the faint of heart. That point was driven home at Gartner's annual IT Symposium fest where analyst David Cappuccio outlined what he called "new forces that are not easily controlled by IT [that] are pushing themselves to the forefront of IT spending." .

The forces of cloud computing, social media/networking, mobility and information management are all evolving at a rapid pace. These evolutions are largely happening despite the controls that IT normally places on the use of technologies, Cappuccio stated. "IT was forced to support tablets, and end users forced them to support IM and wireless networks a few years ago. And more such technologies are on the horizon," he said.

Cappuccio's presentation listed the following as the "Ten Critical Trends and Technologies Impacting IT During the Next Five Years."

DAVID CAPPUCCIO,
ANALYST, GARTNER

1. DISRUPTION

Business-user demand for customer satisfaction is far outstripping the support organizations' ability to meet that demand. IT organizations must invest in the development of IT service desk analyst skills and attributes, and organize appropriately to increase IT's perceived value. Enabling higher levels of productivity at the IT service desk level demonstrates that the IT organization cares about the business, and that it's committed to ensuring that users meet their goals and objectives. While a focus on traditional training, procedures, security access, knowledge management and scripts is warranted, a focus on next-generation support skills will be paramount to meet the needs and expectations of the business more efficiently.

2. SOFTWARE DEFINED NETWORKS

SDN is a means to abstract the network just as server virtualization abstracts the server. With SDN the controller has a view of the entire network topology — both the virtual and physical components of it, including switches and firewalls — and provides the abstracted view to provision and manage the network connections and services that applications and the operators require.

When used along with encapsulations like OpenFlow, SDN can dynamically extend a private cloud into a hybrid model to mask enterprise-specific IP addresses from the cloud provider's infrastructure. SDN also promises to allow service providers to offer dynamic provisioned WAN services, potentially across multi-provider/multi-vendor networks. Of course, there is the potential for significant organizational disruption as traditional network skills begin to shift, and alignment with specific vendor products or platforms becomes less rigid.

3. BIGGER DATA AND STORAGE

Data growth continues unabated. Leading-edge firms realize this and are beginning to focus on storage utilization and management as a means to reduce floor space and energy usage, improve compliance and improve controls on growth within the data center. Now is the time to do this, because most of the growth during the next five years will be in unstructured data — the most difficult to manage from a process or tool point of view. Technologies that will become critical over the next few years are in-line deduplication, automated tiering of data to get the most efficient usage patterns per kilowatt, and flash or SSD drives for higher-end performance optimization, but with significantly reduced energy costs. NAND pricing continues to fall at a rapid pace, moving from $7,870 per gigabyte in 1997 down to $1.25 per gigabyte today.

4. HYBRID CLOUDS

Cloud computing is heavily influenced by the Internet and vendors that have sprung from it. Companies such as Google deliver various services built on a massively parallel architecture that is highly automated, with reliability provided via software techniques, rather than highly reliable hardware. Although cost is a potential benefit for small companies, the biggest benefits of cloud computing are built-in elasticity and scalability, which reduce barriers and enable these firms to grow quickly. A hybrid cloud is composed of services that combine either for increased capability beyond what any one of them has (aggregating services, customizing them or integrating two together), or for additional capacity.

There is an emerging trend in hybrid data centers whereby growth is looked at from the perspective of applications criticality and locality. As an example, if a data center is nearing capacity, rather than begin the project to define and build another site, workloads are assessed based on criticality to the business, risk of loss, ease of migration, and a determination is made to move some either to collocation facilities, hosting, or even to a cloud-type service. This frees up floor space in the existing site for growth, both solving the scale problem, and deferring capital costs. An alternative to this is for older data centers to begin migrating critical work off-site, thus reducing downtime risks and business interruptions, while freeing up the old data center for additional work (non-critical), or for a slow, in-place, retrofit project.

5. CLIENT SERVER

In the PC world of the last quarter century, both the operating system and application were primarily resident on the desktop (some large and complex applications such as ERP were located on servers that could be remote from clients). Today, anything goes! The operating system — as well as the application — can be executed on the PC or a server or streamed to a PC when needed. Choice of architecture is dependent on user needs and the time frame for implementation.

Regarding Windows 8 deployments, 90% of enterprises will bypass broad scale deployment, and will focus on optimized Windows 8 deployments on specific platforms (for example mobile, tablet) only. Servers have been undergoing a long-term evolutionary process. They have moved from stand-alone pedestals to rack-mounted form factors in a rack cabinet. The latest step in x86 server hardware evolution is the blade server. It has taken hardware from just single servers with internal peripherals in a rack cabinet to a number of more dense servers in a single chassis with shared backplane, cooling and power resources. A true component design allows for the independent addition of even more granular pieces like processors, memory, storage and I/O elements.

It always takes a closer examination of

multiple factors —required density, power/ cooling efficiency requirement, high availability, workload — to reveal where blades, rack and skinless really do have advantages. Moving forward this evolution will split into multiple directions as appliance use increases and specialty servers begin to emerge.

6. THE INTERNET OF THINGS

This is a concept that describes how the Internet will expand as physical items and assets are connected to it. The vision and concept have existed for years; however, there has been acceleration in the number and types of things that are being connected and in the technologies for identifying, sensing and communicating. Key advances include:

Embedded sensors: Sensors that detect and communicate changes (such as accelerometers, GPS, compasses, cameras) are being embedded not just in mobile devices but in an increasing number of places and objects.

Image recognition: These technologies strive to identify objects, people, buildings, places, logos and anything else that has value to consumers and enterprises. Smartphones and tablets equipped with cameras have pushed this technology from mainly industrial applications to broad consumer and enterprise applications.

NFC payment: NFC allows users to make payments by waving their mobile phone in front of a compatible reader. Once NFC is embedded in a critical mass of phones for payment, industries can explore other areas in which NFC technology can improve efficiency and customer service.

7. APPLIANCE MADNESS

Organizations are generally attracted to appliances when they offer hands-off solutions to application and functional requirements, but organizations are also repelled by appliances when they require additional investments (time or software) for management functions. Thus, successful appliance products must not only provide a cost-effective application solution, they must require minimum management overhead.

Despite the historical mixed bag of successes and failures, vendors continue to introduce appliances to the market because the appliance model represents a unique opportunity for a vendor to have more control of the solution stack and obtain greater margin in the sale. In short, appliances aren't going away

any time soon. But what's new in appliances is the introduction of virtual ones. A virtual appliance enables a server vendor to offer a complete solution stack in a controlled environment, but without the need to provide any actual hardware. The growth in virtual appliances will not kill physical appliances; issues such as physical security, specialized hardware requirements and ecosystem relations will continue to drive physical requirements.

The very use of the appliance terminology creates great angst for some vendors and users — particularly for physical appliances. A highly integrated platform like Oracle's Exadata or VCE Vblock is not a true appliance; these are factory integrated systems that will require some degree of configuration and tuning, even when the software stack is integrated; they will never fit the classic notion of a "pizza box." But while such systems will not be consumed as appliances, they are certainly packaged and sold in a very appliance-like manner. Many other physical appliances will be more faithful to the concept — they will be plug-and-play devices that can only deliver a very prescribed set of services.

8. COMPLEXITY

The sources of complexity within IT are easy to spot. They include the number of initialization parameters for input into starting an Oracle database (1,600) and the number of pages (2,300) of manuals to use a Cisco switch. The complexity increases, though, when we look at combining several elements such as Microsoft Exchange running on VMware. What makes this complexity worse, however, is the fact that we are not getting our money's worth: Historical studies suggest that IT organizations actually use only roughly 20% of the features and functions in a system. This results in large amounts of IT debt, whose high maintenance costs for "leaving the lights on" divert needed funds from projects that can enhance business competitiveness.

9. EVOLUTION TOWARD THE VIRTUAL DATA CENTER

As we enter the third phase of virtualization (phase 1: MF/Unix, phase 2: basic x86) we see that the higher the proportion of virtualized instances, the greater the workload mobility across distributed and connected network nodes, validating fabric and cloud computing as viable architectures. As more of the infrastructure becomes virtualized,

we are reshaping IT infrastructure. We will see more possibilities where the "fabric" will eventually have the intelligence to analyze its own properties against policy rules that create optimum paths, alter them to match changing conditions and do so without requiring laborious parameter adjustments. X86 virtualization is effectively the most important technology innovation behind the modernization of the data center. With it will be a sea-change in how we view the roles of compute, network and storage elements — from physical hardwired to logical and decoupled applications.

10. IT DEMAND

With the increased awareness of the environmental impact data centers can have, there has been a flurry of activity around the need for a data center efficiency metric. Most that have been proposed, including power usage effectiveness (PUE) and data center infrastructure efficiency (DCiE), attempt to map a direct relationship between total facility power delivered and IT equipment power available. Although these metrics will provide a high-level benchmark for comparison purposes between data centers, what they do not provide is any criteria to show incremental improvements in efficiency over time. They do not allow for monitoring the effective use of the power supplied — just the differences between power supplied and power consumed.

For example, a data center might be rated with a PUE of 2.0, an average rating. If that data center manager decided to begin using virtualization to increase average server utilization from 10% to 60%, the data center would become more efficient using existing resources, but overall PUE would not change at all. A more effective way to look at energy consumption is to analyze the effective use of power by existing IT equipment, relative to the performance of that equipment. While this may sound intuitively obvious, a typical x86 server will consume between 60% and 70% of its total power load when running at very low utilization levels. Raising utilization levels has only a nominal impact on power consumed, and yet a significant impact on effective performance per kilowatt.

Pushing IT resources toward higher effective performance per kilowatt can have a twofold effect of improving energy consumption and extending the life of existing assets through increased throughput. The PPE metric is designed to capture this effect. ■

Networx "has not been successful," agrees Bob Woods, a former commissioner of GSA's Federal Telecommunications Service who runs Topside Consulting. "The ceiling number was artificially high to start with. It shouldn't have been $68 billion; $30 billion would have been plenty. They made the contract so complicated that the transition became impossible to do in a graceful amount of time. Agencies have taken forever to get there."

On Sept. 28, the GSA released a report indicating that U.S. agencies disconnected 99% of their services from the previous telecom services contract, which was called FTS 2001. This milestone should have been reached in 2009, according to original GSA estimates.

"We're years behind schedule," says Edward Morche, senior vice president, general manager of the government markets group at Level 3 Communications. "While the FTS 2001 disconnects are 99% complete, only 70% of the revenue from FTS 2001 has transitioned to Networx. If everyone was happy with Networx — if it was easy and provided value — agencies would have moved 100% of the revenue over. What we're seeing is other contracting vehicles being used."

Networx offers 48 services from toll-free voice to Web hosting, but these services are not bundled to allow agencies to easily buy end-to-end solutions. Also, Networx doesn't offer cutting-edge cloud and wireless solutions because the contract was written in 2005, before these technologies emerged.

GSA argues that Networx is succeeding in its goal to save agencies time and money when purchasing complex telecom services.

"Last year, the Networx contract saved the federal government more than $660 million on commercial rates," Mary Davie, GSA Federal Acquisition Service acting commissioner, said in a statement. "The contract allows GSA to provide core networking services to almost every federal agency; and those agencies typically save between 30% to 60% on the cost of services. In 2012, Networx saw the highest business volume on the contract to date, leading to additional cost savings."

As of Oct. 19, 257 of 266 agencies had transitioned off the FTS 2001 contract, and the remaining nine agencies were expected to complete their transition by December.

Some Networx vendors — particularly Verizon and AT&T — are faring better than their rivals. Deltek estimates that Verizon has earned 47% of Networx revenues, while AT&T has earned 41% and CenturyLink 12%. Sprint and Level 3 have earned less than 1% of revenues, Deltek estimates.

Verizon was the largest incumbent on the Networx predecessor FTS 2001 contract, so

Networx revenue delayed

Comparison of US federal goverment's FTS2001 and Networx telecom contract revenue by fiscal year.

FTS2001 REVENUE WAS SUPPOSED TO END IN FY09. THIS CHART SHOWS HOW SLOW THE REVENUE HAS COME TO NETWORX, WHICH WAS AWARDED IN FY07.
*FEDERAL FY 2012 RAN FROM OCT. 1, 2011 TO SEPT. 30, 2012

rivals say it isn't surprising that it is earning the most revenue.

"It was very hard for agencies to decide what to do, and the default position was for them to stick with the incumbent," Morche says. "It's the people looking to grow their revenue from the agencies who are going to be the most frustrated. Level 3 might be the most frustrated."

Even carriers like AT&T that have fared relatively well on Networx say the revenue flow has come much later than anticipated.

"Our management is like everyone else's: They wanted a return on the tremendous investment we put into Networx. They were anxious," admits Jeff Mohan, executive director of GSA programs for AT&T Government Solutions.

Nonetheless, Mohan is confident that Networx is finally hitting its stride and will be a successful contract for AT&T. . "I would characterize [Networx] as perhaps a little late in maturing," he says.

The carriers aren't the only ones suffering from the slow transition to Networx, argues Diana Gowen, senior vice president and general manager at CenturyLink. Gowen says agencies have been paying higher telecom bills on the older FTS 2001 contract.

"From a savings-to-the-government perspective, I would have to say this contract has been a failure, but no one on [Capitol] Hill or

at [the Office of Management and Budget] has gotten concerned enough to really propel this further," Gowen says. "There are still agencies who have not made decisions, have not transitioned [to Networx] and have not disconnected" from the more expensive FTS 2001 contract.

Topside Consulting's Woods says the pricing is good on Networx, but that GSA did not do enough to help agencies transition to the complex contract. So some agencies chose other contracting vehicles because Networx is not mandatory.

Another issue that slowed Networx transition was that GSA and the agencies lacked an accurate inventory of network services purchased under the predecessor contract.

"Say we got 10,000 telephone numbers to transition to Networx. We couldn't just do that out of the gate because of the inventory challenges. We had to check that all of the numbers belonged to the agency and weren't a dry cleaner or somebody's home," Mohan says.

Carriers are urging GSA to change Networx to make it easier for agencies to use when buying complex services to drive up revenues for the second half of the contract.

"For me, it's the next five years that are really going to [show] the success of Networx," says Susan Zeleniak, senior vice president of Verizon Public Sector. ■

TOOLS

PhoneGap fills the smartphone development gap

Mobile apps are all the rage these days, but to get one built for your organization can be a daunting financial prospect. Should you decide to go to a bespoke shop to have your dream iOS or Android app coded you would be looking at a seriously large price tag.

But if you're looking for Android and maybe iOS, Android, BlackBerry, Windows Phone, Palm WebOS, Bada (Samsung's smartphone OS), Tizen and Symbian as well, you could be looking at a biblical price tag.

What if you could use your in-house Web guys with their HTML and CSS and JavaScript skills and, with a lot less hassle (and expense), build your own apps? Sounds like a dream, doesn't it?

Well, a dream it is not ... such an ambitious plan has been realized by the BBC, Nestle Mexico and NASA Science using an amazing free, open source development platform called PhoneGap.

It is claimed that PhoneGap (a.k.a. "Apache Cordova" ... just to make things confusing), which was contributed to the Apache Software Foundation, has been downloaded over 1 million times and is being used by over 400,000 developers.

According to the PhoneGap Website, "Nitobi was the original creator and is one of the primary contributors to the PhoneGap framework. In October 2011, Adobe acquired Nitobi, enabling the team to focus solely on the PhoneGap project and continue its work on efficient development across mobile platforms.... There is also a vast global community that contributes to the

Mark Gibbs' Gearhead

project, including many from IBM, RIM, Microsoft and more."

The scope of involvement by so many big players is fascinating and raises hope that a true cross-operating system development platform for smartphones that relies on well-understood programming paradigms could become a reality. Just imagine if the gap between identifying a smartphone-based business need and rolling out a robust, fully featured, multi-platform app was a matter of weeks or perhaps even days rather than months!

PhoneGap is the most well-developed cross-smartphone development solution Gibbs has come across.

So, what does PhoneGap do? It provides access to smartphone APIs for everything from accelerometer to camera, compass, contacts, file, geolocation, media (audio and video), network, notifications (alert, sound, vibration) and storage, all via JavaScript interacting with HTML and CSS. It's beautiful!

Of course, even though PhoneGap is out of beta, it's not all wine and roses. Documentation is poor and be prepared for some conflicting instructions and moderately serious debugging.

For a general overview that is rather clearer than the PhoneGap documentation see "Explanation of PhoneGap/Cordova for the Layman" (tinyurl.com/d7wza4p), and for installation of the latest version check out "PhoneGap 2.1.0 in Mac OS X Mountain Lion 10.8: from Download to iOS App Store" (tinyurl.com/cek2d2e), both by Steve Husting. Following Husting's instructions I had a "Hello World" app up and running on the iPad simulator within about 15 minutes!

PhoneGap, while not a complete walk in the park, is the one of the most fully featured, most flexible and most well-developed cross-smartphone development solutions I've come across and, when it comes to capitalizing the basic Web skills of HTML, JavaScript and CSS, it stands on its own! PhoneGaxp gets a Gearhead rating of 4.5 out of 5! ■

Gibbs is cross about platforms in Ventura, Calif. Develop your thoughts at gearhead@gibbs.com.

Security question #17

Can your Next-Gen Firewall pass the ultimate security and performance test? How about excelling in three?

NETWORKWORLD

Dell SonicWALL wins IDG Network World's
Clear Choice performance test.

3x Acclaimed

See the results for all three independent tests:
sonicwall.com/sweepNWW

It's been a rewarding year for Dell™ SonicWALL™ and our enterprise customers. The Dell SonicWALL SuperMassive™ E10800 came out on top in the IDG Network World Clear Choice performance test for Next-Gen Firewalls. The SuperMassive E10800 delivered proven speed along with proven protection and control. Dell SonicWALL came close to maxing out the test bed's network capacity, not only in firewall-only tests but also when configured with IPS and anti-malware features enabled. The SuperMassive E10800 decrypted SSL traffic at up to 4.8 Gbps and also led the way in application detection.

Dell SonicWALL secures the enterprise.

DELL SonicWALL

GADGETS

New options for powering gadgets while commuting

Keith Shaw's
Cool Tools

PowerCup 200 Watt Inverter with USB Power Port
about $35

Fully charged, the Summit 3000 can provide 13 hours of extra talk time for a phone.

Summit 3000 rechargeable power bank
by MyCharge, about $80

▶ **What it is:** The Summit 3000 is a 3000mAh lithium polymer rechargeable battery that can recharge several different portable devices. It includes a built-in cable for Apple devices like the iPhone, iPod and iPad (at least the older Dock Connector models, not the new ones with the Lighting port). Another built-in cable is for micro-USB devices, which include several Android phone models. A USB port also allows for recharging devices if owners also have their own USB cable for recharging (this could be used, then, in theory, for iPhone 5 and iPad fourth-generation owners).
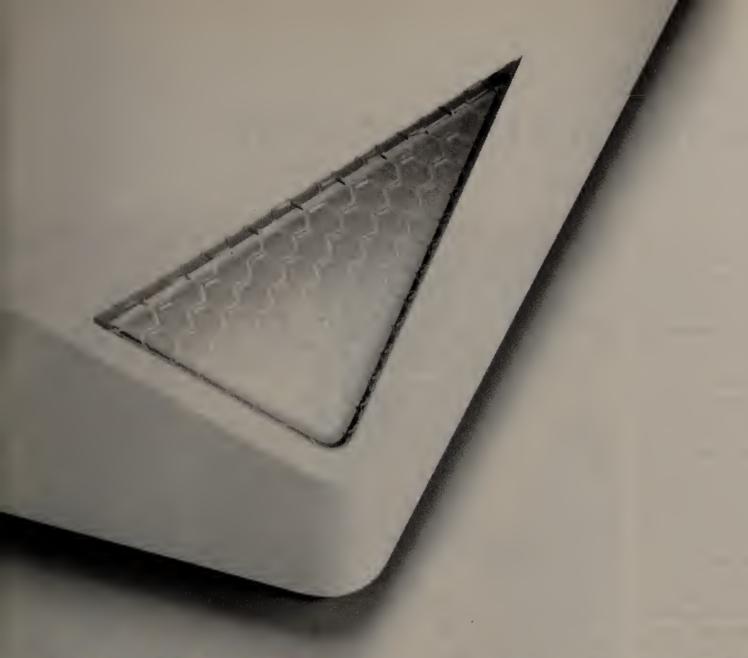
In fact, you can recharge three devices simultaneously (via the Dock Connector, USB port and micro-USB cable). However, there's a small issue: If three high-powered devices are connected at the same time, the Summit 3000 assigns priority charging to the Apple Dock Connector, then the USB connector, then the micro-USB cable. If you plug in lower-powered devices (such as an iPod Nano or iPod classic), simultaneous charging can occur.

▶ **Why it's cool:** While the unit comes with its own USB cable for recharging the device off a laptop (like the Sojourn 1000 model), the extra cool part here is a fold-out power outlet prong, which lets you plug the Summit 3000 into a wall or power strip for super-fast recharging of the battery pack. Also cool is the voice notification feature: When you plug the unit into the wall, a pleasing voice tells you that it's charging. The voice also can tell you how much battery life you have on the recharger — press a button and it will say things like "Battery is almost full." Cool!

Fully charged, the device can offer up to 13 extra hours of talk time for a phone (over a 3G network), and up to 10 hours of data time (again, over 3G — Wi-Fi usage is likely less). If you want to use this unit as a synchronization bridge between an iPhone/iPod and a computer, you can do that as well.

▶ **Some caveats:** At $80 it might seem a bit pricey for a rechargeable battery pack, but the ability to charge many portable devices at the same time (including a Bluetooth headset and an e-reader, for example) make this a great device to have in your laptop bag of gadgets.

▶ **Grade ★★★★ (out of five).**

▶ **What it is:** Shaped like a large-size cup of coffee that you'd get at Starbucks or Dunkin' Donuts, the PowerCup fits nicely into your car's standard cup holder slot. But instead of coffee, tea or hot chocolate coming out of the cup, instead you get power for your mobile devices.

▶ **Why it's cool:** The PowerCup lets you power up two regular "household devices" through its regular power ports (basically you could power a laptop, DVD player, blender, fan, etc.), as well as one USB-powered device (think iPod, iPhone, iPad, etc.). The PowerCup itself is charged via your car's cigarette lighter adapter, so as long as your cup holders are near the cigarette lighter port, you're good to go.

▶ **Some caveats:** Be careful that you don't accidentally grab the PowerCup on your morning commute instead of your hot beverage. Or spill your coffee into the PowerCup.

▶ **Grade ★★★★**

Shaw can be reached at kshaw@nww.com. Follow him on Twitter: @shawkeith.

MOBILE DEVICE MANAGEMENT

Top tools for BYOD management

MobiControl and Afaria lead the way in five-vendor test of MDM tools

BY TOM HENDERSON

When we tested mobile device management (MDM) last year, the products were largely focused on asset management — provisioning, protecting and containing mobile devices.

What a difference a year makes. The products we compared in this round of testing have much stronger controls of specific smartphones and mobile operating systems, plus features like location-based tracking, usage tracking, two-factor authentication and sandboxing of personal and corporate identities.

Of the five MDM apps we reviewed, SOTI's MobiControl was very strong and understood specific phones and OS platforms very well. Tangoe had very strong enterprise-focused management features. Newcomer Webroot is promising, but still has work to do to catch up to the others in our test. SAP's Afaria, which we tested last year, sported a new, almost radical makeover that's a dramatic improvement over the last edition. Venerable LanDesk has added MDM to its desktop management suite, and while the installation phase gave us moderate willies, we came to appreciate the product's device controls, easy policy management and reporting.

Overall, MobiControl and Afaria tied for first place in our test, with Tangoe not far behind.

The specific purpose of our test was to examine mobile device management. However, it's important to note that all five vendors offer MDM as well as a variety of other optional applications. These additional features were not tested.

For example, Tangoe also offers telephony cost control and asset life cycle applications. LanDesk adds its highly seasoned Windows-based systems management console. SAP/Afaria adds in optional analytics and its MDM app can be internally hosted on SAP/Sybase database infrastructure (Microsoft's, too). SOTI adds MobiAssist, a PC/mobile device help desk center with rapid remote control. And Webroot adds a line of consumer virus/malware detection systems and secure Web browsing.

Here are the individual reviews:

Tangoe MDM

Tangoe installs on its hosts (at a Data Foundry collocation facility and elsewhere), or can be deployed on premises, or run as a managed service within a client's data center (by Tangoe or Tangoe affiliates). We went with the hosted cloud model (because it's easier, frankly). A full stack of the installation can be accessed via VPN.

Tangoe started in telephony cost containment and asset control applications, and their products offer complete mobile device life cycle management. The MDM functionality was mature and reflects workflow used in larger organizations well. The Web UI in our test didn't quite define the workflow, but became rapidly maneuverable.

The Tangoe MDM app can cover iOS, Android, BlackBerry and Windows Mobile. The customer intake process starts with provisioning the elements of Tangoe MDM, then deploying the apps and software into their destinations. In our case, that was Tangoe's cloud.

Tangoe MDM workflow wanted us to go through the steps of deciding security and compliance policies in one of two ways: a flat model that treats all devices the same, or one that divides devices into two profiles, personal and corporate.

ILLUSTRATION: HUAN TRAN

Apps, data, encryption and settings are partitioned on the device for control purposes, although this feature, called Divide, costs extra per device, per month.

This optional corporate/personal profile becomes the crux of a device sandbox methodology; the device then maintains and partitions the two personalities. We tested this on an Android phone, and we found that some resources (applications, settings, and configurations) must be duplicated, so the resources of the device in terms of storage must be considered. Lots of apps will mean lots of storage and the amount set aside for business vs. personal storage (music, apps, videos) must be understood well, or one of the roles will suffer for want of space.

The amount of data, voice and texting resources used is also tracked on the device, and the information is available (by policy option) to the user so that costs can be shown. This includes a breakdown by application of how much phone resources are used on the device (a phone in our case) and how much remains within the billing period. Individual apps can be "outed" for their voracious use (example: videos).

To get there, we had to define a Carrier Plan, which spells out various options. The device

Tangoe MDM offers a mature, enterprise-grade option for BYOD control.

sends information which is used to create a working graph of usage against the Carrier Plan. The resource tracking can portend a reality check for the user, although we weren't able to run up sufficient numbers to live in fear for our monthly costs. Will it tame the wild user? We think it could help.

There's integration available with Active Directory, and/or Microsoft Office 365, and Microsoft's Business Productivity Online Services, but we didn't strongly test these features.

We could also choose application delivery for devices, crafted through mobile device-specific categories. App distribution would be through an organization's "enterprise app store" or chosen from platform stores such as Google Play. The apps aren't vetted for security first; that's up to the client organization. We could add to the pool of apps, and additionally choose to push applications (again by OS-specific methods) to phones for initial updates, replacements or other uses.

Although the policy-making steps gave us questions about operations, we found a handy "test" button so that we could try them out before inflicting them on groups of new users. We liked that. The online help docs are good, but lack flow suggestions and

integration information, so Tangoe help, in at least initial integration, is likely for first-time integration of Tangoe MDM.

Overall, it's a powerful application with understandable flow and good controls.
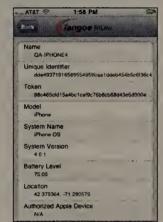
SOTI MobiControl

Of the MDM apps we tested, SOTI is the most comprehensive (for Android and iOS), if not the most scary MDM app we've seen. The fright comes from the degree of controls that can be applied — and the fact that it can track phone locations across most parts of the planet on its console's Google Maps. We got visuals in Google Maps of where the phone was going, as though we were tracking the device (and user) down the street as it traveled. We thought of three-letter agency appeal.

Using specific brand phone technology — Samsung's in our test — it can put you on a specific hole at a golf course using Google Maps. On other devices, it's just slightly less accurate in finding location and sometimes merely put us in a vicinity, rather than an exact location, when we were in downtown areas.

This means: no more fudging about "Oh, I'm at home today with a sick child," or "I'm still in Stockholm." Of course, that same location-based user vectoring can also be tremendously useful. "Which plant is she in?" "Oh, look, he's stuck on the FDR Expressway again." "No, he's still in his hotel."

Only the administrator of the MobiControl can "see" this information, but we get

NETRESULTS

Product	Tangoe MDM	SOTI MobiControl	Webroot SecureAnywhere Business-Mobile Protection v1.0	SAP/Sybase/ Afaria 7	LanDesk Mobility Manager
Price	MDM: $2/device (1,000 or more) per month as tested; Containerization add $4.50/device/month; Content Management add $4.75/user/month; rTEM (Real-Time Expense Management) is $1/device/ month (1,000 devices)	Starts at $66/device	Less than $3 per month per device	Seats start at $2-$3 per month, per user (hosted through Amazon Web Services and managed by customer or third party)	List price: $38 per device at 1,000 nodes for a perpetual license; street price: $22-$28
Pros	Very good provisioning; ability to partition user devices	Highly detailed user controls and package options; outstanding device location	Has device location, secure browsing feature	Improved unified UI; rapidly deployed	Very good Active Directory integration; easily configured app portal
Cons	Optional features can boost overall costs	On-prem version not as up-to-date as cloud version	Immature, a few bugs	No location services; weaker app control	Truckload installation; doesn't vet app states (e.g., rootkits and malware)

SCORECARD ‖‖

Product	Tangoe MDM v12	SOTI MobiControl	Webroot	SAP Afaria 7	LanDesk MDM	
Installation & Provisioning (25%)	4.5	4.5	3	4	4	**SCORING KEY**
Policies and Management (25%)	4	4.5	2	4.5	3.5	5: Exceptional 4: Very Good
Control Features (25%)	4	4.5	3	4	3.5	3: Average 2: Below Average
Setup, Workflow and Documentation (25%)	4.5	4.5	2	5	4	1: Consistently Subpar
Total	**4.25**	**4.5**	**2.5**	**4.3**	**3.75**	

the feeling that it opens up a Pandora's box of interesting situations.

There are two versions of MobiControl; we tested the cloud version, rather than the on-premise one. Customer intake includes Active Directory linking where needed or desired.

We used a Windows 7 virtual machine hardwired to an IPv4 address in our network operations center as a virtual machine; this machine needs a world-accessible IP address or FQDN or proxy connection, as devices will communicate with this machine. If there are many devices, the machine will need reasonable firewalling/protection and high availability resources.

The SOTI proxy machine needs to have two ports open (and cleared to it from the outside world), and that machine also needs a clear path to an Active Directory catalog

MobiControl is the most comprehensive product we tested.

server for proxy authentication purposes. This allows user requests from outside a network to get to it, and permits Active Directory commands and changes to pass through SOTI for control purposes.

The SOTI MobiControl covers iOS, Android and older Windows Mobile versions. We had to create groups, then devices to fill in the groups, then describe, via a Device Agent Manager, the device itself. It was only slightly laborious for basic connectivity and control. The real work comes in designing payloads and managing authentication keys (where needed) and accessibility components for organizational access via Active Directory where desired.

Fleet provisioning can be detailed for various qualities of mobile devices, depending on their brand/model, OS and version, and other qualifiers. The details could be specific to phones for application payload purposes (one can include a varying payload of apps if desired), or departmentally sorted payloads (apps, policies). Inside the payload can be things like security keys to access SSL-secured Exchange Mail, or app packages and/or data and/or links to them or settings controls. Workflow, like Tangoe MDM, isn't quite obvious, but setup strategy can be decided with a little bit of experimentation.

We obtained the MobiControl device app from the Apple App Store and Google Play. We installed the app, and entered a code. The code, in turn, vectors to the aforementioned Windows 7 MobiControl admin app that we'd configured. Once linked, the phone is locked down to whatever's been configured in the management app. The phone also then sends, via the carrier or Wi-Fi, the approximate

location of the device.

Also included is a company store-like app catalog, which SOTI doesn't vet through Appthority or another third-party mobile application analyzer.

We found MobiControl's provisioning and administration model to be both well thought through and, in terms of user locational privacy, a bit scary from a management perspective — very useful in some cases, but onerous in others. We might choose it for both reasons, but only after a review about what ethical locational privacy standards should be.

Webroot SecureAnywhere Business-Mobile Protection

Webroot has taken its online, graduated-feature set of personal/consumer MDM control apps (called SecureAnywhere Personal), and upgraded it to a small organization-size cloud product. We believe we're first to review it, as the "Business" version is brand new. We found it immature, but promising.

Webroot is known for its highly rated desktop virus/malware protection products, and SAB-MP is an extension of a portal-based MDM product. Webroot tries to protect the phone through secure browsing, SMS examination for origin of malware, and has a virus/

malware scanning app.

As a cloud-only product and in its first iteration, it's a little raw, but has pretensions toward eventual features covered by SOTI, such as location-based geolocating of users, and certificate-based phone control. It's less complicated, but also not as strongly featured as SOTI and Afaria.

Like other packages we tested, there are two sides to the installation: first an administrative setup, and second, a user-side download either to an Android or iOS device. Today, there isn't control for ActiveSync/Microsoft devices or BlackBerry. The payload deposited on Windows or Android mobile devices and the payload and subsequent mobile device app isn't configurable or "skinned" with corporate logos, surgically applied policy controls, etc. Control is based on approved apps, and contained Web surfing.

We went through a simple customer intake experience (sign up on the Web), and in a few short steps, were inside the SaaS-based cloud UI. We liked the two-method authentication process for administrative portal access. We added users, which could be done manually or from an imported Active Directory list (instructions included). You can delete Active Directory users who don't have phones.

A URL/QR code is then emailed or SMS-sent to desired devices that takes them to Google Play or an Apple App Store link, where the device-specific application that will serve as a phone controller is located. The user clicks on that link and is sent a payload that installs on the phone. The Google Play link didn't require a Google account to download in our tests. After installation is complete on the phone, a username and password (sent in the SMS or email) is entered, and the phone then falls into Webroot's clutches.

Webroot supplies users with a restricted browser setting. The setting serves as an optional URL filtering authority that limits, through blacklisting, the sites that the browser can surf to. Webroot keeps a list of sites that are off limits and will prevent users from surfing to sites on their list. Although this list is said to be mature, it's difficult for us to test. We noted that it doesn't blacklist by content type; the phrase "NSFW" is meaningless. There's also a USB Debugging Shield and "Unknown Sources" shield that can be used to filter content entering the phone from USB, Bluetooth or memory card.

Webroot's MDM product is somewhat immature, but shows promise.

SecureAnywhere for iOS requires an initial administrative step to build an Apple Push Notification Certificate so that the download for the site can exist in the Apple App Store. One gets a link (specific to the organization), downloads the app, and the app behaves largely like the Android version.

The mobile device payload/app can query the phone for location information, then gives the longitude/latitude best-guess to Google Maps on the Webroot administrative console, then, like SOTI, shows the ostensible location of the phone. A map with a pinpoint means: you're there. A wider-diameter circle on the map means: somewhere in the area roughly inside the circle. The phone has to have some type of geolocation service turned on, or at least provide carrier-based information, to do this. Using apps like Google Play to locate a user takes longer than having GPS enabled (which is a minor battery waster).

The Lost Device Protection includes geolocation, the ability to make the device Scream (where did I leave it?), wipe the device, lock, unlock and lock with message. We noticed a few delays getting messages to our test phones, while others were nearly instantaneous. It might have been the carrier's fault, although the inconsistencies were odd to us.

In all, the SAB-MP app is rudimentary and easy to understand, has no device payloads or model-specific widgets, and is poised more toward smaller organizations. The docs were primitive but explained the operations at the level of a systems operator. Civilians might have problems, but support and community forums are available at the Webroot website.

Webroot did not identify our Android rootkit, SuperUser, as malware. A Webroot spokesperson says that the company identifies malware through its own processes, and "benign rootkits" are not identified as malware. We hope Webroot changes its policy, as we believe there is no such thing as an active "benign" rootkit. Also, Webroot uses its own system of identification of malware apps to be flagged. Although we didn't seed malware onto our phones, we could not test this claim.

In all, Webroot needs a bit of polish to get to the point where the other products start, although it looks promising.

LanDesk Mobility Manager

The LanDesk Management Console platform is based on Windows Active Directory

Services, Exchange 2007 or 2010, and the RIM BlackBerry Enterprise Server, if you use it (we don't).

The LanDesk Mobility Manager is an add-on to the basic (and required) LanDesk Management Console. It can be used without the Active Directory services, but we don't recommend this, as the ActiveSync infrastructure and Microsoft Exchange would likely be a hassle without it. Your management day will be bad if you try.

The LanDesk MDM product would be the third server in your Windows-based network after a Windows 2003/8 (or R2) primary "catalog" server, and a second server that hosts the Management Console.

Windows server licenses can be minimal; they just need to be in the same forest and can be virtual machines. If VMs or discrete bare-metal servers are used, they need a minimum of 50 free gigs of storage. If you have Microsoft Exchange (check your version as there are differences in functionality between 2007 and 2010; we used Exchange 2010), it can understand and utilize the APIs that Exchange offers to control devices.

The easy part is initial device provisioning. Get the LanDesk app from the Apple App Store, or from Google Play. Install it, and authentication to the server is next. Also, the Mobility server needs to be on your DMZ with a world (or at least carrier-accessible) FQDN or IP address. This is similar to how SOTI and Webroot work. From there, it's possible to add a device app that allows an additional portal access (after it's configured in the Mobility Manager) for apps, files, etc. that can be downloaded to the device.

Mobility Manager does an initial check of the client mobile device for rootkits and jail-breaks on enrollment; flags can be set to allow enrollment despite the presence of these device states. After enrollment, they can be detected, we found, but aren't necessarily quarantined, although their state is noted in the inventory reports. There are no restrictions placed on browsing. Our rooted/jailbroken devices were identified, but you can "grandfather in" devices whose states are questionable. However, your devices won't be geolocated because location tracking isn't offered.

Active Directory policies, in terms of control, are easily applied. You can lock a phone, change its PIN and wipe the phone (and can remove the wipe command if you get the timing right, so as to allow a user time to find it). We could also send VPN and email settings, and even Wi-Fi pre-shared keys to the devices we controlled.

If Exchange 2010 is installed, polices can be enabled to prevent user access to mail, if

Microsoft

INSERT
AVAILABILITY
HERE

WINDOWS SERVER 2012 KEEPS YOUR APPLICATIONS UP AND RUNNING.

Bring the availability of cloud computing inside your datacenter with Windows Server 2012, the only server built from the cloud up. It lets you set up failover systems within your datacenter or at a remote location. So your applications are available when and where you need them.

Windows Server 2012

BUILT FROM THE CLOUD UP.

microsoft.com/ws2012

**CLEAR
CHOICE
TEST**

desired, or to allow only users managed by the app to get email, as a policy. We tried this and it works. If organizational mail is sensitive or shouldn't be accessed by BYOD devices, here's the place to manage the device, whilst gleefully preventing email-borne problems associated with mobile devices. You get access, but no mail. And you, over there, you get mail.

The device polling frequency is selectable, which we prefer, and we increased it and found that the reaction time in the devices improves as a result. In this setup, there are several potential points of failure, which need to be guarded or made more highly available, as the path to the Mobility Manager server in our test "DMZ" is critical for interaction between the Mobility Manager and its managed devices.

While we like the LanDesk configuration, we'd feel more comfortable if devices brought under its management control received a sound thrashing at installation for rootkits and jail-broken conditions. Beyond this, however, for an organization that wants to leverage a sound Active Directory infrastructure, the free Management Infrastructure that you get with the Mobility Control is a decided plus.

SAP Afaria 7

When we looked at what was then Sybase Afaria, we found a comprehensive package whose approach had Frankenstein-like integration. Since that time, Sybase and Afaria have been acquired by SAP, and their approach to MDM is now integrated into a single Web-UI portal that, in turn, controls modular servers that perform various elements of device management and control.
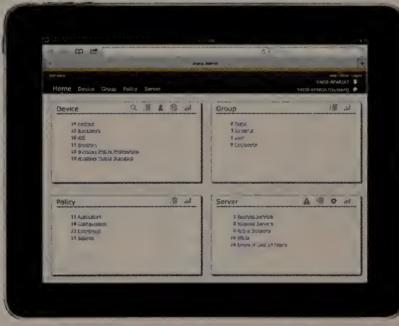
Its UI is non-obvious, but with a short bit of reading through the docs and getting light assistance, we found it to be both understandable and packed with workflows poised toward BYOD and mischief control.

The entire Afaria 7 package can be cloud based (we tried ours in Amazon Web Services) or as members — probably virtual machines — in an enterprise network framework. Each portal can be connected to an organization's Windows Active Directory, but only in the flat model — one domain per instance of Afaria 7 — although a spokesperson said multiple domains/forest can be dealt with by perhaps the end of 2012.

The improvements are major, but some assembly is required. The assembly comes

at the crux of a current marketing program where a two-week trial of Afaria on AWS is offered, with optional third-party help (you get presales dedicated engineering help) to configure the right initial platform. It's a complicated decision tree, and you'll probably need the help. With the trial, Afaria preloads the configuration and, in turn, starts allowing clients to go down a decision tree of configuration options appropriate to their workflow and policy mandates.

The "single pane of glass" in Afaria 7 overcomes the several pains of glass that were demonstrated in our last view of Afaria 6, which was comprehensive, but mind-boggling to manage. In the current cloud model, Afaria still uses modular components, but processes are now linked together logically. As an example, we can set up a device with a specific group and policy in about five mouse clicks.

SAP Afaria 7 is a vast improvement over Version 6.

There can also be "master" or distributed servers that cover different business units or logical/geographical areas, subject to the Active Directory limitation mentioned. Or you can go without Active Directory at all, if desired — meaning users and authentication becomes more manual in administrative nature.

The tasks are similar to other MDM packages: build groups, set policies, get users to sign on and control the device, whether iOS, Android or Windows Mobile (to v7). Afaria can provision a device via Active Directory membership, an organization's Certificate Authority, via MS-CHAP v2, or by allowing a user to download a payload through one of several resources appropriate to the device.

Software application payloads aren't initially included, but are sent subsequently.

One can develop an "enterprise application store" if desired; in the SAP model. SAP's applications are vetted for behavior, but your applications are on your own — yet easily populated into an enterprise store for subsequent download by subscribed users.

Afaria does the initial two-week customer trial configuration of host services in the AWS cloud, although manual instructions to provision into AWS are included for those who must do this themselves (generally, for security reasons). In a non-preloaded cloud, enterprise installation, the turf is a Windows Server instance using Microsoft SQL Server or Sybase iAnywhere.

We could put users into groups of three kinds: Static, Dynamic, or Individual. Group memberships have policies applied, and if there are two, policies of both groups that a device is a member of. We suggest use of Dynamic Groups, as they also allow the ability to move users whose devices are compromised (rootkit, jailbreak, appearance of a hostile application) into those groups for easy monitoring and mitigation.

We used the included (pre-configured) Self Service Portal to obtain our test device's initial Afaria client payloads. We chose not to have a device that's compromised to have allowed access, so that once enrolled, the device could receive a remediation message. Otherwise, if access is denied, a user only receives a message that the device is compromised and the software won't install. The payload can be re-initialized in this case, after a rootkit or other offending condition is removed.

Afaria immediately found our SuperUser rootkit and classified the device in the way we desired.

Afaria polls groups by default, once a day, but we found ourselves upping the polling rate to detect changes, as we feel other organizations will.

Afaria lacks some competitive components, like location-based user device tracking. Individual devices can be shut down, but locating them isn't offered. Packaging can be skinned with organizational logos, for customizing. What we found objectionable in our last review, a sense of grafting and disjointed applications, has changed dramatically and for the better. ■

Henderson is principal researcher for ExtremeLabs, of Bloomington, Ind. He can be reached at kitchen-sink@extremelabs.com.

NETWORKWORLD

■ Editorial Index

■ Advertiser Index

These indexes are provided as a reader service. Although every effort has been made to make them as complete as possible, the publisher does not assume liability for errors or omissions.

*Indicates Regional Demographic

NETWORKWORLD

BPA WORLDWIDE™

What do 100% of mobile users want? No fails!

THE RUSH to make everything mobile has generated new ways to do business, new ways to organize ourselves and new ways to communicate, but mobile apps aren't your father's mainframe, desktop or laptop applications.

Nope, mobile apps exist in a world where not only is the underlying network transport anything from great to nonexistent (which leads to all sorts of complexities), but also the polish and brio of leading mobile apps has created user expectations that, if I were to hazard a guess, are an order or two of magnitude greater than enterprises are used to delivering!

The issue of vastly greater mobile app user expectations is, I'd suggest, pretty much all Apple's fault. If only Steve Jobs hadn't been so obsessive about design values and perfect execution, all of the mobile app development shops would have a much easier time of it. But no, Apple D.J. (During Jobs) produced the iPhone, the iPad and iOS, and along with those platforms the idea that apps should be slick, polished, responsive and beautiful became the norm.

If you doubt that users feel that way, consider a recent survey: The 2012 Mobile App Review (tinyurl.com/d9elklb) by Apigee, a company that provides API-based services to support mobile apps. This survey (conducted online in October) of more than 500 U.S. mobile app users aged 18 and older, revealed some interesting stats.

First of all, 44% of those surveyed said that poor performance would make them delete an app immediately! Moreover, 18% of them admitted they would delete a mobile app if it froze for just five seconds.

Just think of that. Five seconds at best, immediately at worst!

What's interesting about this low tolerance is the app could be trying to retrieve data from a slow remote server over a slow network, but if the app appears to be non-responsive, users will more-or-less immediately rate it to be a fail. Apps need to be built to deal with users whose patience has shrunk from minutes in the 1990s to seconds in the 'aughts, and now to milliseconds here in the 'teens.

The survey showed that freezes (76%), crashes (71%) and slow responsiveness (59%) were major deal-breakers, as was heavy battery use (55%).

The survey also found that how the app publisher responds will make a big difference in how users feel about a problematic app. Almost 90% said the No. 1 thing that will make them feel better about a failing app is if the publisher fixes the problem quickly, with 46% wanting personal responses and 21% wanting a public apology (it's worth noting that failing to apologize appears to get 100% of Apple execs fired — see tinyurl.com/aqxj895).

So, when you plan to release your next mobile app for your enterprise, whether it's developed in-house, bespoke developed, or a commercial product, think very carefully about how the app looks, feels, communicates, how it might fail, and how you'll handle problems if anything goes wrong.

One hundred percent of users will "like" you for making the right decisions. ∎

Gibbs is up on stats in Ventura, Calif. Your percentage satisfaction to backspin@gibbs.com and follow him on Twitter and App.net (@quistuipater) and on Facebook (quistuipater).

A disappearing vendor . . . and an outed troll

THIN-CLIENT MAKER Pano Logic, headed by former Wyse CEO John Kish, has gone out of business ... without so much as a public word to the customers it has left high and dry.

In fact, the closure was so abrupt and stealthy that last week on Buzzblog I felt obligated to couch my post with the phrase "apparently has gone out of business," although the circumstantial evidence was probably enough to forgo that formality.

The company's previously active Twitter account had issued its last tweet Oct. 22.

The same went for Pano Logic's Facebook page, where anxious customers were leaving messages like: "Why has the management and investor sections of your website been removed?" And: "What is your post-bankruptcy plan for support and parts?"

The latter question was posed by Sean Kubin, a senior associate at Network Data Services in North Little Rock, Ark. He told me that he posted that message after he and his co-workers went to extraordinary lengths to contact the company by phone and email.

"We couldn't get anyone to pick up the phone or return our messages," Kubin says. "Finally, some [Pano Logic] VP picks up the phone — he just happened to be there cleaning out his desk — and he says that out of the blue everyone was told they were gone."

Desperate for more information, Kubin said Network Data Services pressed its contacts at technology wholesaler Ingram Micro to see what they knew. "A couple of days later they got back to us and said we had a scoop; that [the closing] had something to do with a cease and desist order that [Pano Logic] couldn't fight," Kubin says.

Who knows whether there's any validity to the cease and desist thing? Guessing is one thing that happens in cases like this.

Pano Logic was founded in 2006, raised more than $35 million in venture capital and employed some 50 or more people.

Then went poof! You'd think someone would feel a responsibility to explain. So far, at least, you'd be wrong.

Why the hurricane Twitter troll shouldn't be prosecuted

Last week a New York official was urging the district attorney to consider bringing charges against one Shashank Tripathi, who goes by the obnoxious name @comfortablysmug on Twitter and used that account to spread alarmist lies during Hurricane Sandy. Charging Tripathi would be a bad idea, in my opinion, not to mention unnecessary.

While irresponsible and just plain rotten, it doesn't appear that what this fool did rises to a level calling for criminal prosecution. After all, if we're going to bring the force of law to bear on those who use the Internet to spread falsehoods, we might find ourselves atop the slipperiest of slippery slopes ... and almost certainly the most crowded one.

Tripathi, who did apologize, was forced to resign his position as a political consultant. If he gets to keep his day job on Wall Street he will be lucky; if not, he will receive little sympathy.

But most of all, the same Internet that this guy so blithely abused during a time of crisis will make sure that what he did is not soon forgotten ... Just Google his name.

All the legal system could do is fine him a few dollars. ∎

Want to dish about Pano Logic? The address is buzz@nww.com.

HP ProLiant DL385p Gen8 server

Lower your costs without lowering your expectations.

Welcome to the new **HP ProLiant DL385p Gen8 server**. Powered by AMD Opteron™ 6200 Series processors, it offers you 150 customer-inspired design innovations with 3X faster firmware updates.* It's also designed to fit your budget, with the lowest cost per virtual machine* and a 15% savings over similarly configured servers.* It all adds up to more innovation and performance, for less.

The power of HP Converged Infrastructure is here.

Learn more with the IDG white papers *Virtual Machines Find Ideal Physical Home* and *Transforming Your Database from a Pain Point to a Power Point*.

Visit hp.com/go/gen8rackserver5 or scan the QR code.